TABLE 20.—NUMBER OF THUNDERSTORMS.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November	December.	Annual.
1890	.....	.....	.....	.....	.....	2	2	2	3	6	1	0	.....
1891	0	0	0	1	1	4	4	5	1	4	1	0	21
1892	0	0	0	0	0	3	0	1	3	2	2	0	11
1893	0	0	0	0	1	3	6	3	5	4	0	0	22
1894	0	0	0	0	2	3	0	0	3	4	0	1	13
1895	0	0	0	0	2	2	4	4	1	5	1	0	19
1896	0	0	0	0	2	2	3	3	4	2	1	0	17
1897	0	0	1	0	0	2	3	2	2	0	0	1	11
1898	0	0	0	0	0	1	2	5	5	1	0	0	14
1899	2	0	1	0	0	3	3	1	2	4	1	0	17
1900	0	0	0	1	0	1	2	1	0	3	0	0	8
Average	0.2	0	0.2	0.2	0.8	2.4	2.6	2.5	2.6	3.2	0.6	0.2	15.3

TABLE 21.—NUMBER OF EARTHQUAKES.

1890	.....	.....	.....	.....	.....	0	0	0	2	1	2	2	.....
1891	0	0	2	0	0	0	2	2	0	1	1	1	9
1892	0	0	0	0	1	1	0	1	1	1	0	0	5
1893	0	0	0	0	0	0	1	0	1	1	0	0	3
1894	0	2	0	0	2	3	1	2	0	0	0	0	10
1895	0	0	1	0	2	0	1	1	1	1	0	1	8
1896	1	0	2	0	0	1	0	0	1	0	0	0	5
1897	0	1	2	1	0	0	1	1	2	0	0	0	8
1898	2	1	2	1	0	0	0	0	1	0	0	0	7
1899	0	0	3	0	0	1	0	0	0	2	0	2	8
1900	0	0	1	1	0	0	1	1	1	3	2	1	11
Average	0.3	0.4	1.3	0.3	0.5	0.5	0.6	0.7	0.9	0.9	0.5	0.6	7.4

NOTE.—When the data for any month is missing, the average for that month has been used in obtaining the annual mean. The letters in the figure columns indicate the number of days missing from the record; for instance, "e" denotes five days missing.

NOTES BY THE EDITOR.

MR. ALEXANDER ASHLEY.

When the Editor came to the weather service in January, 1871, as civilian assistant to the Chief Signal Officer of the Army, his first acquaintance was Mr. Alexander Ashley, who was usually spoken of as Chief Clerk, although, strictly speaking, he was Chief of the Division of Correspondence and Records; and now, after more than thirty years of public service together, the Editor regrets to have to announce the death of his colleague. Mr. Ashley's official record is as follows:

Born at Pittsburg, Pa., May 31, 1831. Served as an enlisted man in the United States Army from May 10, 1861, to March 31, 1863. (Private Company I, Tenth Regiment, Pennsylvania Reserve Corps, May 10, 1861; Corporal August 12, 1862; detailed from the Army for signal duty August, 1861; assigned to Office of Chief Signal Officer March 19, 1862; discharged from Army March 31, 1863.) Appointed civilian clerk April 1, 1863. Died April 11, 1901.

Mr. Ashley was graduated from Allegheny College, at Meadville, Pa., which conferred upon him the degrees of A. B. and A. M. He enlisted and was ordered to Washington, D. C., at the outbreak of the war; was detailed for duty under Gen. A. J. Myer, and later assisted him in the formation of the meteorological service of the Signal Corps. All scientific papers passed through his hands; for several years he prepared and had printed lists of the principal scientific documents preserved in his files, which lists were a great convenience for reference in the daily work of the office. He was also the recorder and historian of the Veteran Signal Corps Association. On June 30, 1887, on account of his advancing age, he vacated the position then regarded as that of chief clerk and was assigned to less exacting work. From July, 1897, until his death, he was on duty as examiner with the United States Civil Service Commission, by detail from the Weather Bureau.

Animated by the highest ideals of duty, Mr. Ashley's life was one of great official activity and personal influence. Both in official and private life he adhered to the right without a trace of compromise. Often a great amount of work was suddenly imposed upon him and his assistants, and he never failed to hold himself to duty as strictly as he held his subordinates; withal he was as kind and considerate of the rights and feelings of others as any comrade or brother could be. Although essentially a business man, a soldier, and a churchman, yet, he knew also how to further the scientific interests of the meteorological service in minor details and in many ways the Weather Bureau has been benefited by his long and faithful career.

MR. CHARLES DAVIS.

Mr. Charles Davis died at Charlotte, N. C., April 26, 1901, after a brief illness. He was born in Wilmington, N. C., on April 24, 1870, and educated in the graded schools of Chatham, Va., being graduated from the Chatham High School. He entered the meteorological service of the Government on August 21, 1889, and served as an assistant at Vicksburg and Meridian, Miss., Pensacola, Fla., Galveston, Tex., New Orleans, La., and Memphis, Tenn. In June, 1894, while but 24 years of age, he was promoted to the important position of observer in charge and assigned to duty at Shreveport, La. Four years later he was placed in charge of the Charlotte station, where he continued on duty until his death. His record in the Bureau is an enviable one. In his meteorological work he attained a high degree of accuracy, for which he was several times officially commended. A few months ago his station was rigidly inspected and found to be in splendid condition. In the death of Mr. Davis the Weather Bureau sustains a distinct loss. His good work as an observer and his excellent qualities as a man will be long remembered.

LORIN BLODGET.

This eminent statistician and author of several works on meteorology died in Philadelphia, March 24, 1901. He was born in Jamestown, N. Y., May 25, 1823, and was educated at the academy in that place and at Hobart College, Geneva, N. Y. His interest in meteorology was aroused during the years 1841–1844 when traversing Wisconsin, Illinois, and Iowa for the purpose of examining and purchasing land. As one of the voluntary observers and correspondents of the Smithsonian Institution he attracted the notice of Prof. Joseph Henry, who (1851–1854) employed him in the reduction of the meteorological records that were rapidly accumulating. After a few years, owing to a difference of opinion as to his right to use these official records for his own publications, this arrangement was terminated. He subsequently prepared some of the climatological charts published in the reports of the Surgeon General, and in 1857 published his "Climatology of the United States," a book that attracted much attention and is still often quoted, although its different sections are of very unequal value.

At the Cleveland meeting of the American Association for the Advancement of Science, in 1853, he presented several papers on meteorology. In 1854–1857 he was employed in barometric hypsometry by the army engineers surveying the Pacific Railroad. The subsequent portion of his life was devoted to general statistics, and for a long time he was general appraiser of customs for Philadelphia. However, about 1890, he found time to make several reports to the Secretary of State for Pennsylvania, on the climatological records of that State. He is the author of about 150 volumes on economical, financial, and industrial matters, and perhaps 400 pamphlets, besides thousands of editorial articles.

He labored unselfishly to promote the public interests in widely varied fields, and his life, work, and character, remind us very much of his distinguished neighbor, Franklin B. Hough, who was born in northern New York a few years earlier.

HAWAIIAN WEATHER FOR FEBRUARY, 1901.

Mr. Curtis J. Lyons, in a letter dated April 17, 1901, gives the following account of the general weather conditions during February in the Hawaiian Islands:

The main feature of the month here was the great low that persistently hung around these islands from the 4th to the 14th. In fact, after a very clear day on the 1st, it clouded up on the 2d, beginning with wisps of cirri. The cloud movement you will have seen in my February report. The storm evidently came up from the south-southwest, as the wind was southeast, an unusual storm wind here, and shifted afterwards to southwest and even north, backing into southwest again. I am inclined to think the storm described a loop in its course. The steamer *Mariposa* met it two days or 600 miles northeast of here on the 6th. I think it moved off to the north-northeast then east, making the Oregon coast on the 15th, but without reports from ships at sea between these islands and the coast, this is merely a conjecture. The open question here is whether our storms usually move toward the Oregon coast or toward San Diego. The storm which your weather maps show as crossing the entire continent from San Diego to Maine during the above-mentioned period was, of course, another low and not this one. It would seem that important storm movements do take place at the same time in widely separated sections of the same hemisphere.

It seems a noticeable fact that most of the storms of the past two months in the United States have, to an unusual degree, moved from the southwest instead of from northwest.

There was a good deal of thunder and lightning during several days of this storm. The barometer was the lowest for twenty years, both for the storm and for the month.

I may be pardoned for introducing a theory of mine, which seems rather in accordance with facts, that during the years of minimum sunspot frequency there is an increase of solar heat. This first takes effect in equatorial regions causing a preponderance of northerly currents of air in the semitropical belt, thus producing a dry season. The next season we have increased heat in the semitropical belt, followed by a movement of air from the southwest and heavy rains. This is precisely what has taken place here within the last two or three years. This state of things might show at some places and not at others. The summer of 1900 was unusually warm here, and the rainfall from October 1 to April 1, 1900, was 35 inches, 10 inches above the normal for that period. A wet winter had been predicted.

I give this only for what it is worth, as possibly bearing on the variation of the average track of storms during the different years. In speaking of northerly currents of air, upper currents are particularly included.

I shall be happy to continue, as far as possible, to notice what connection may be apparent between lows here and lows on the coast. Inclosed is a specimen of monthly local report, also the daily weather item.

In his regular monthly local report for February, as published in the Pacific Commercial Advertiser, Honolula, March 1, Mr. Lyons gives the detailed records of the rainfall at all stations and a number of general items from which we copy the following:

Barometer average, 29.838; normal, 29.947 (corrected for gravity by —.06); highest, 30.11; lowest, 29.48; greatest 24-hour change, 0.22. The above is the lowest average, also the lowest single reading for twenty years. Lows passed this point on the 6th and 20th; highs on the 16th and 28th. * * *

The main feature of the month was the storm of February 4 to 14. This storm moved up from south-southwest, beginning here with a southeast gale, which is an unusual direction for storm winds around this group, this wind being called by the Hawaiians "makani kiu." Veering southwest after two days it became a regular "Kona," accompanied by electric storms, the barometer sinking to 29.48. The storm seems to have formed a loop in its course, as after moving away it returned again before finally going to the northward. Turning to the eastward it appears to have reached the Oregon coast about the 19th. Great damage was done, especially on the Maul and on the Kona and Konala slopes of Hawaii. Snow fell on the Hawaii mountains well below the timber line, 7,000 feet.

WEATHER BUREAU OFFICIALS AS INSTRUCTORS.

Mr. J. P. Bolton, Observer Weather Bureau, Fresno, Cal., states that the class in physical geography from the Fresno High School visited the Weather Bureau office on April 23 for instruction in the use of meteorological instruments. On April 26, at the request of Superintendent McLane, Mr. Bolton lectured to this class in the high school on weather forecasting and the daily weather map.

Mr. W. E. Donaldson, Observer Weather Bureau, Binghamton, N. Y., reports that he gave the pupils of the Free School of Union, N. Y., a lesson on local and general weather conditions and the preparation of daily weather maps, illustrated by the map of March 20, 1901. It is his intention to give frequent talks on meteorology to all the schools in his vicinity, along lines readily understood by pupils over fifteen years of age.

Mr. Alexander G. McAdie, Forecast Official, lectured upon the climatology of California, at the Students' Observatory, Berkley, Cal., on April 23.

Mr. F. L. McClintick, Observer, lectured before the Lewiston, Idaho, Commercial Club on April 3. His remarks were confined principally to temperature, and he exhibited and explained to his audience the various thermometers employed by the Bureau.

Mr. W. A. Shaw, Observer, states that he has recently completed a course of instruction in meteorology to the senior class in the Norwich University, Norwich, Vt. The course covers a period of eleven weeks, with two hours each week. Waldo's Elementary Meteorology is used as a text-book, but is supplemented by lectures on special subjects and by the study of Weather Bureau maps and charts. This course, which was established by Prof. Henry J. Cox, in 1887, is now a *required* study for the senior class. Mr. Shaw also lectured before the Norwich High School on Weather maps and weather forecasting, on April 19.